long enough exposed to it, the olenumts oxy^vn und sulphur (in so far as they are not retained by tho constituents of th«» cinders) and hydrogen are able to be* as much as contpli'trly driven off, and there remains a residim which, in tin* main. is carbon, which only contains as an impurity thu wm*titw*nlH of the ash.

The gases obtained from dry distillation aro combustible and therefore serve for heating purpoHtm. Thoy ron.siM principally of free hydrogon, and hydrocarbons, toj.;*'thfr with small amounts of carbonic and and carbon montfvidr, consequently containing carbon. .But of tho total uniount »»f carbon which is contained in the ftiol, only a small portion ran be converted into the form of gas by moann of dry di'-tillulion, the bulk remaining as the Imforo-inuntiontul tvwdw.

If one allows oxygen to act on this n»sidw» tlw fiirbon content of the same is able to bo comph?t'»ly t*ouvt»rft*d inl»>* fhti form of gas, so that of tho fuol, tinally, only tho intfmtiHU* uf the ash remain as a rosiduo. If tlu^ gahifinitiou of tin* hiHi-mentioned quantity of carbon, which in tin* main uiity ^iv*^ rise to the formation of combustible carbon wouoxitiis \v«»rr no performed that it succouded in ana-lysin^ tho fuol info min bustible gases, and the ingredients of tlu* a.sh» ono wutilil h*i able often to make inoro cionvoniont and l»tstti«r utiltHniutii of the former than of the nolid fuol ilBolf.

(I) TlIH OxYdHN Nl'H'KHSAItY Foil CiASiKH'ATloN,

This is supplied to iho pnxlucnr in two forum; iit tln» form of atmospheric air and of wator-vapour.

The atmospheric air IK well uxpoHcd t<» tluvt»mticin« iit itn composition, but those am vwy inKiguifk*ani» i^poriiillv if ttm air be regarded as being in iho dry condition ; thus tmcuiwiiyH assumes it for technical caleulationn as binng ittiuli* up of %2l volumes 0 and 7i) volumes Nf.

Thus 1 volume 0 is accompanied by • * N or H*7(i*2

*«» i of nitrogen.

Of these two gason, only the oxygon talciw pitri in thi« changes, as opposed to which Urn nitrogun nnmt b« a superfluous arid inert ballast.